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Creeping Bentgrass Dollar Spot Study

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Abstract
Creeping bentgrass forms a dense, uniform playing surface ideal for sport and is commonly utilized on golf course putting greens and fairways. Despite its widespread use, creeping bentgrass is susceptible to many turfgrass diseases including dollar spot (Sclerotinia homeocarpa). Recently developed cultivars of creeping bentgrass are available that have increased disease resistance and would be desirable to turf managers who manage creeping bentgrass turf with limited fungicide applications.

The objectives of this study were to determine the susceptibility of creeping bentgrass (Agrostis stolonifera) cultivars to dollar spot under both green height and fairway height.

Keywords
RFR A1132, Horticulture, Turfgrass

Disciplines
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Creeping Bentgrass Dollar Spot Study

RFR-A1132

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Introduction

Creeping bentgrass forms a dense, uniform playing surface ideal for sport and is commonly utilized on golf course putting greens and fairways. Despite its widespread use, creeping bentgrass is susceptible to many turfgrass diseases including dollar spot (*Sclerotinia homeocarpa*). Recently developed cultivars of creeping bentgrass are available that have increased disease resistance and would be desirable to turf managers who manage creeping bentgrass turf with limited fungicide applications.

The objectives of this study were to determine the susceptibility of creeping bentgrass (*Agrostis stolonifera*) cultivars to dollar spot under both green height and fairway height.

Materials and Methods

The fairway height (0.5 in.) and green height (0.25 in.) studies were conducted at the ISU Horticulture Research Station, Ames, Iowa. This study is part of a regional project conducted at several Midwestern Universities and included 24 cultivars. The green-height study area was established on a sand-capped area, and the fairway-height area was established on a native soil area (Nicollet clay-loam).

Both studies were established September 17, 2008. The plots were allowed to mature until the spring of 2009. The plots were then split into untreated and fungicide treated halves. The study was conducted as a randomized split block design, with three replications.

Fungicide treatment timing was based on the cultivar Declaration, which is the most dollar spot tolerant cultivar in the study. Treatments were made to the green height plots when Declaration was observed to have at least 5 percent of the plot area infested with dollar spot. The fairway height study area was treated when Declaration was observed to have at least 10 percent of the plot area infested.

The fungicide mixture consisted of Emerald (0.18 oz product/1,000 ft^2) and Daconil Ultrex (3.2 oz product/1,000 ft^2), applied in 2 gallons water/1,000 ft^2. The applications were applied using a modified spray boom, with two TeeJet XR flat fan nozzles. In 2011, fungicides were applied on June 6 and July 8 to the fairway trial only. The green height trial suffered winter damage and did not recover in time to conduct the study this year.

Results and Discussion

An outbreak of dollar spot began in early June and continued through July. Little dollar spot was present on the untreated areas through the later part of the summer and fall. The least susceptible cultivars in June were Southshore, Kingpin, Century, A-4, Crystal Bluelinks, 007, Tyee, SR 1150, Memorial and Declaration (Table 1). Century had the greatest infestation of dollar spot in the untreated plot. In July Memorial and Declaration were the cultivars with the least infestation (Table 1).

Table 1. Effects of fungicide application on dollar spot development in the creeping bentgrass fairway height study-2011.

	June			July		
Cultivar	**No fungicide[a]**	**Fungicide[b]**	**Overall quality[c]**	**No fungicide[a]**	**Fungicide[b]**	**Overall quality[c]**
L-93	7	12	7	65[A]	13[B]	6[C]
T-1	24	2	6	67	7	7
Alpha	22	10	6	67	15	6
Putter	29	12	6	70	12	6
Southshore	33	1	5	73	7	7
Kingpin	4	1	7	37	18	6
Crenshaw	36	29	5	77	15	6
Imperial	38	20	6	72	35	5
Century	73	2	7	83	13	6
Penncross	20	1	6	60	13	6
A-4	35	2	6	72	13	7
Crystal Bluelinks	4	5	7	40	12	6
Alister	11	1	7	40	12	7
Pennlinks II	14	0	6	42	20	6
007	5	2	6	40	12	6
MacKenzie	20	20	6	80	18	6
Tyee	4	7	6	53	13	6
SR 1150	6	0	6	37	13	7
Memorial	2	2	8	17	15	7
Independence	23	1	6	60	13	6
Declaration	5	1	6	30	7	7
LS – 44	16	18	6	63	17	6
Bengal	30	14	6	60	13	6
Penn G-6	30	1	7	63	13	6
LSD 0.05	25	NS	1	17	NS	NS

[a]Untreated control plot. Numbers represent percentage of disease within the plot.
[b]Treated with fungicide consisting of Emerald (0.18 oz product/1,000 ft^2) and Daconil Ultrex (3.2 oz product/1,000 ft^2). Numbers represent percentage of disease within the plot.
[c]Quality ratings: 9 = best, 1 = dead turf, 6 and above acceptable.